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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: Michael Reasoner EXAMINER: Luong, V.

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FOR: CONDUIT SHORTENING ADJUSTMENT ASSEMBLY

ATTORNEY DOCKET NO: 65,748-449

APPEAL BRIEF

Box AF
Assistant Commissioner of Patents
Washington, D.C. 20231
Dear Sir:

Subsequent to the filing of the Notice of Appeal on March 20, 2000, Applicant hereby submits its brief. Fees in the amount of $300.00 are paid by an attached check. If any additional fees are necessary, you are hereby authorized to charge Deposit Account No. 08-2789 in the name of Howard & Howard Attorneys.

Real Party in Interest

The real party in interest is Teleflex Incorporated, the assignee of the entire right and interest in this Application.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 4-40 remain in the application. Claims 6-16, 22, and 29 were indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 36-40 have been withdrawn from consideration by the Examiner as being directed to an invention that is independent or distinct from the originally claimed invention.

Claim 27 stands rejected under 35 U.S.C. 112, first paragraph.

Claims 17, 27, and 37-40 stand rejected under 35 U.S.C. 112, second paragraph.

Claims 4, 17-21, 23-28, and 37-40 stand rejected under 35 U.S.C. 102(b).

Status of the Amendments

All amendments have been entered. The claims in their current form are included in the accompanying Appendix.

Summary of the Invention

Applicant's invention relates to a motion transmitting remote control assembly 10 that transmits motion in a curved path via core element 12. The assembly includes first 14 and second 16 conduits that movably support the core element 12. The first conduit 14 includes a male member 18 and the second conduit 16 includes a female member 20. The male 18 and female 20 members define telescoping adjustment components that interconnect the first 14 and second 16 conduit sections for adjusting the overall length of the conduits 14, 16.

A spring 22 interacts with the male 18 and female 20 components to bias the components 18, 20 together to shorten the overall length of the first and second conduit sections 14, 16. A retainer 24 is disposed on the male member 18 during assembly for retaining the spring 22 in compression. The spring 22 is a coil spring that is spiraled around

the male member 18.

A locking member 19 is supported by the female member 20 and engages teeth 21 along the male member 18 when in the locked position to prevent relative telescoping movement between the members 18, 20. The locking member 19 is U-shaped with teeth 23 on the interior surface of the legs for engaging the teeth 21 of the male member 18. Hooks 25 on the legs interact with detent recesses 27 in the female member 20 to hold the locking member 19 in an intermediate position, out of engagement with teeth 21. The female member 20 includes catches 28, positioned below the detent recesses 27, for engaging and retaining the hooks 25 to lock the locking member 19 in the locked position.

An abutment is presented or defined by the locking member 19 for reacting with the end of the spring 22 upon assembly of the male 18 and female 20 telescoping members so that the telescoping members 18, 20 are biased together in the direction to shorten the overall length of the conduits 14, 16. An annular collar 26 reacts axially between the retainer 24 and end of the spring 22 during assembly and reacts between the spring 22 and the locking member 19 during adjustment of the overall length of the conduits 14, 16.

The male member 18 defines an inner end 32 and the female member 20 presents a bottom end wall 34. The inner end 32 of the male member 18 is adjacent to bottom end wall 34 when the male member 18 is fully inserted into the female member 20 to define the shortest overall length of the conduits 14, 16. The retainer 24 presents a reaction surface for reacting with the collar 26. The reaction surface is axially spaced toward the bottom end wall 34 from the abutment presented by the locking member 19 when the inner end 32 is adjacent to the bottom end wall 34. This is accomplished by a pillar 36 extending into the female member 20 from the bottom end wall 34. The male 18 and female 20 members include complementary

keyways 38, 40 for rotary orientation of the male member 18 relative to the female member 20 to align retainer 24 within the locking member 19. Further, the male member 18 presents a limit surface 42 for engaging the inner conical end of the pillar 36 to limit the insertion of the male member 18 into the female member 20 to define the shortest overall length.

During assembly, once the pillar 36 abuts limit surface 42, the collar 26 is disposed closed to the bottom end 34 than the edge of the pocket for receiving the locking member 19. This means that the locking member 19 can clear the collar 26 as the locking member 18 is inserted into the intermediate position. In this position, the retainer 24 may move through tunnel 30 as the length of the conduit is increased whereas the sides of the locking member 19 will engage collar 26 to compress the spring 22 thereby biasing the telescoping members 18, 20 together to shorten the overall conduit length.

Issues

(1) Is the final rejection of claims 4, 17, 20, and 21 under 35 U.S.C. 102(b) proper based on United States Patent No. 5,339,783 to Teichert?

(2) Is the final rejection of claims 4, 5, 17-21, 23-27 under 35 U.S.C. 102(b) proper based on United States Patent No. 4,598,809 to Glover et al.?

(3) Is the final rejection of claims 37-40 under 35 U.S.C. 102(b) proper based on United States Patent No. 5,119,689 to Adams?

(4) Is the final rejection of claims 17, 27, and 37-30 proper under 35 U.S.C. 112, second paragraph?

(5) Is the final rejection of claim 27 proper under 35 U.S.C. 112, first paragraph?

Grouping of Claims

A. The rejection of Claims 4 and 17 under 35 U.S.C. 102(b) is contested.

B. The rejection of Claim 5 under 35 U.S.C. 102(b) is separately contested, i.e., claim 5 does not stand or fall with claim 4.

C. The rejection of Claim 18 under 35 U.S.C. 102(b) is separately contested.

D. The rejection of Claim 19 under 35 U.S.C. 102(b) is separately contested.

E. The rejection of Claims 20-21 under 35 U.S.C. 102(b) is separately contested.

F. The rejection of Claims 23-27 under 35 U.S.C. 102(b) is separately contested, i.e., claims 23-27 do not stand or fall with claim 20.

G. The rejection of Claim 28 under 35 U.S.C. 102(b) is separately contested, i.e., claim 28 does not stand or fall with claim 20.

H. The rejection of Claim 37 under 35 U.S.C. 102(b) is separately contested.

I. The rejection of Claim 38 under 35 U.S.C. 102(b) is separately contested, i.e., claim 38 does not stand or fall with claim 37.

J. The rejection of Claim 39 under 35 U.S.C. 102(b) is separately contested, i.e., claim 39 does not stand or fall with claims 37-38.

K. The rejection of Claim 40 under 35 U.S.C. 102(b) is separately contested, i.e., claim 40 does not stand or fall with claim 37.

Arguments

A summary of the arguments detailed below for each of the three (3) prior art patents is set forth in the Interview Summary dated April 12, 2000. First, with regard to the Teichert '783 patent, the core element 12 is not movable inside the conduit 54 because the core 12 is secured to the fitting 54 (col. 5, line 66). Second, the conduit sections of the Adams '689 reference are not shortened because the spring 20 pushes the conduit away. Finally, Fig. 4 of Glover shows that the spring does not shorten the conduits. All claim rejections are overcome based on these arguments. A more detailed analysis is given below.

A. *The rejection of Claims 4 and 17 Under 35 U.S.C. 102(b) Is Improper*

Teichert '783

The Examiner proposes that claim 4 is anticipated by United States Patent No. 5,339,783 to Teichert. The Teichert patent is directed toward an improved throttle breakover device that limits the force exerted upon an engine throttle lever by a throttle cable or linkage. The Examiner's desire to call the fitting 54 of Teichert a "conduit section" does not meet the claim limitations set forth in claim 4. Claim 4 specifies that the flexible motion transmitting core element is movably supported in the conduit sections. What the Examiner calls a "conduit section" is actually a fitting 54, 56, 58 that moves with the cable 12, col. 5, lines 60-68. The Teichert patent indicates that "the fitting 54 of the illustrated embodiment is swaged or otherwise secured onto the cable 12." Column 5, lines 67-68. Thus the core element in Teichert is not "movably supported in the conduit sections" as required by claim 4, but is instead secured for movement with the cable 12.

The Examiner responds that Applicant has "misconceived" the explanation set forth

in the Office Action. The Examiner argues that Applicant misinterpreted the explanation in that the Examiner is not calling fitting 54 a "conduit section" but instead the conduit section is the component that is labeled as 58. In fact, in the Office Action mailed on August 16, 1999, the Examiner admitted that "the second conduit 58" was the same as fitting 54, page 5, line 2. As clearly shown in Figures 2A, 2B, and 3 of Teichert, "58" is merely an extension of fitting 54. Fitting 54 is a single piece component that includes an enlarged abutment flange 56 and an extension portion 58 of a reduced cross-sectional dimension that extends from the abutment flange 56, col. 5, line 66 – col. 6, line 4. Thus, if fitting 54 "is swaged or otherwise secured onto cable 12" then abutment flange 56 and extension 58 are also secured to cable 12 and all three portions 54, 56, and 58 move with the cable 12. This means that neither 54, 56, nor 58 can be conceivably interpreted as a conduit section that movably supports a core element.

Further, Teichert discloses that depression of the accelerator pedal pulls the cable 12 and applies a force to a throttle lever 20. As shown in Figure 2A, the coil spring 38 does not significantly deflect as the throttle lever 20 moves from the idle position to the full throttle position. However, if the pedal is depressed beyond full throttle, as shown in Figure 2B, the coil spring 38 compresses to absorb the breakover movement of the throttle cable 12, col. 7, lines 7-17. Thus, the spring 38 does not interact between the spring guides 40, 42 to bias the guides ***together*** to shorten the length. In fact, as can be seen in Figures 2A and 2B, the coil spring 38 shown in the Teichert reference biases the guides 40, 42 ***away*** from one another. As set forth in column 7, lines 41-53, when pressure on the pedal is released the coil spring ***expands*** and returns to its initial position shown in Figure 2A.

Similarly, since the fitting 54 and the stop 16 are both secured to the cable 12, the

distance between the guide 40 and the fitting 54 can never change. The Examiner has referenced Figure 2a and 2b of Teichert. Although the drawings are not necessarily drawn to scale, the Examiner has clearly made a mistake in measuring the drawings. Referring to the Examiner's Exhibit I, the Examiner has drawn distance L1 too short--the Examiner did not draw L1 to extend all the way to the same point on the guide 40 as he did in Figure 2b. Rather, as shown on the attached modification of the Examiner's Exhibit, the Examiner mistakenly shortened the distance L1 to exclude the last coil in the spring of Teichert in Figure 2a. This apparently resulted in the Examiner's measurement that the distance L1 was shorter that the distance L2, when in fact the distance between the guide 40 and fitting 54 ***does not and cannot*** change between Figure 2A and 2B.

Applicant's modification of the Examiner's exhibit is attached, see Modified Exhibit I. The elements 40 and 54 from Fig. 2A have been cut out and placed adjacent the same elements in Fig. 2B. As is clear from this exhibit, the distance between the components does not change.

The Examiner argues that Applicant's Modified Exhibit I misses the point because the Examiner did not call the fitting 54 as the conduit section as Applicant alleged. Instead, conduit section is referred to as reference number "58." As Applicant has explained above, 54, 56, and 58 are formed as a one-piece component that is permanently fixed to cable 12. Further, the Examiner has already admitted that 54 and 58 are the same.

Claim 4 also includes the limitation of a retainer (24) for retaining the spring (22) in compression on one of the members (18, 20) where the members (18, 20) include an abutment (19) for reacting with the spring (22) in place of the retainer (24) to bias the members (18, 20) together in the direction to shorten the overall length of the conduit

sections (14, 16). The Teichert reference does not disclose such a combination. The spring in Teichert is seated between end 52 and flange 46 at all operable positions. Thus, there is no abutment that reacts with the spring in place of a retainer to bias the members together to shorten the overall length of the conduits.

Claim 17 adds the further limitation that the spring (22) expands axially to bias the components (18, 20) together to shorten the overall length of the first and second conduit sections (14, 16). As discussed above, the spring in Teichert does not bias the components together. Thus, claims 4 and 17 are not anticipated by Teichert and the rejection should be withdrawn.

Glover '809

The Examiner proposes that claims 4 and 17 are anticipated by United States Patent No. 4,598,809 to Glover (Glover '809). Claim 17 requires that the adjustment components (18, 20) interconnect the first and second conduit sections (14, 16). First, what the Examiner calls adjustment components (elements 5 and 20 of Glover) do not "interconnect" the sections 7 and 9. It is unclear whether the conduit section 7 is connected to the member 20, but the conduit section 9 is clearly not connected to the housing 5. Thus, what the Examiner calls adjustment components do not interconnect the sections 7 and 9. This can be clearly seen in Figures 3 and 4 of Glover where the conduit section 9 is clearly moveable relative to the housing 5 (not "interconnected").

The Examiner argues that "conduit sections 7 and 9 of Glover are interconnected in the same manner as applicant's conduit sections 14 and 16 shown in applicant's Fig. 1." This is clearly not the case. As shown in Applicant's Figure 3, the conduit section 16 is clearly attached/connected to female member 20 as the end of conduit 16 is received within

a bore in female member 20. In Glover, the conduit section 9 is not in any way connected or attached to what the Examiner calls the female member 5. Thus, the elements 5 and 20 do not interconnect the first and second conduit sections 7 and 9.

Further, as can be seen in Figure 4 of Glover, any adjustment that is made to conduit 7 is subsequently made to conduit 9 in the same direction. If conduit 7 is shortened, i.e., moved to the right in the direction of arrow 50, via the spring 35 pulling member 20 further into collets 31, the conduit section 9 is also moved to the right. As member 20 moves to the right it compresses spring 44, which moves conduit section 9 to the right. Thus, the overall length of conduits 7 and 9 together are not shortened.

Claim 4 also includes the limitation of a retainer (24) for retaining the spring (22) in compression on one of the members (18, 20) where the members (18, 20) include an abutment (19) for reacting with the spring (22) in place of the retainer (24) to bias the members (18, 20) together in the direction to shorten the overall length of the conduit sections (14, 16). The Glover reference does not disclose such a combination. The spring in Glover is seated between flange 37 and flange 36 at all operable positions. Thus, there is no abutment that reacts with the spring in place of a retainer to bias the members together to shorten the overall length of the conduits.

Claim 17 adds the further limitation that the spring (22) expands axially to bias the components (18, 20) together to shorten the overall length of the first and second conduit sections (14, 16). As discussed above, the spring in Glover does not bias the components together to shorten the overall length of the conduits. Thus, claims 4 and 17 are not anticipated by Glover and the rejection should be withdrawn.

35 U.S.C. 112, Second Paragraph

Claim 17 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite because claim 17 depends from cancelled claim 1. Applicant proposes to amend the dependency of claim 17 from claim 1 to claim 4.

B. The Rejection of Claim 5 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 5 is anticipated by United States Patent No. 4,598,809 to Glover (Glover '809). Claim 5 includes the limitation of a male member 18 with adjustment teeth 21 and a locking member 19 supported by the female member 20 for engaging the teeth 21 in a locked position to prevent relative telescoping movement between the members 18, 20. The Examiner argues that elements 30 and 31 in Glover are a locking member that is supported on the female member 5 to prevent relative telescoping movement.

Elements 30 and 31 are not locking members. Instead element 30 is a clutch assembly used to accommodate wear. The clutch 30 includes a plurality of collets 31 with teeth that engage teeth on member 20. The clutch 30 allows the member 20 to move relative to housing 5 as wear occurs. Clutch 30 is completely housed within housing 5 and is inaccessible to the external environment. If clutch 30 locked the female and male members together to prevent telescoping movement, then there could never be any adjustment and conduits 7 and 9 would never move. Thus, claim 5 is not anticipated by Glover and the rejection should be withdrawn.

C. The Rejection of Claim 18 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 18 is anticipated by United States Patent No. 4,598,809 to Glover (Glover '809).

Claim 18 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) wherein one of the adjustment components includes adjustment teeth (21) and the other of the adjustment components supports a locking member (19) that selectively engages the teeth (21) to prevent relative telescoping movement between the adjustment components (18, 20). Claim 18 also requires a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16).

First, what the Examiner calls adjustment components (elements 5 and 20 of Glover) do not "interconnect" the sections 7 and 9. As discussed in detail above in "Section A", conduit section 9 is clearly not connected to the housing 5.

Second, as can be seen in Figure 4 of Glover, any adjustment that is made to conduit 7 is subsequently made to conduit 9 in the same direction. If conduit 7 is shortened, i.e., moved to the right in the direction of arrow 50, via the spring 35 pulling member 20 further into collets 31, the conduit section 9 is also moved to the right. As member 20 moves to the right it compresses spring 44, which moves conduit section 9 to the right. Thus, the overall length of conduits 7 and 9 together are not shortened.

Finally, elements 30 and 31 cannot be locking members. As discussed above in "Section A", element 30 is a clutch assembly used to accommodate wear. Thus, Glover does not anticipate claim 18 and the rejection should be withdrawn.

D. The Rejection of Claim 19 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 19 is anticipated by United States Patent No. 4,598,809 to Glover (Glover '809).

Claim 19 includes the limitations of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16). Claim 19 further includes the limitations of a coil spring (22) interacting between the adjustment components (18, 20) to bias the components together to shorten the overall length of the first and second conduit sections (14, 16) and a collar (26) supported on one of the adjustment components (18, 20) for reacting axially between the one of the adjustment components and the spring (22).

First, what the Examiner calls adjustment components (elements 5 and 20 of Glover) do not "interconnect" the sections 7 and 9. As discussed in detail above in "Section A", conduit section 9 is clearly not connected to the housing 5.

Also, as discussed above in "Section B", any adjustment that is made to conduit 7 is subsequently made to conduit 9 in the same direction. Thus, Glover does not anticipate claim 19 and the rejection should be withdrawn.

E. The Rejection of Claims 20-21 Under 35 U.S.C. 102(b) Is Improper

Teichert '783

The Examiner proposes that claims 20-21 are anticipated by United States Patent No. 5,339,783 to Teichert. Claim 20 includes the limitations of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and a coil spring (22) interacting between adjustment components (18, 20) to bias the components together to shorten the overall length of the first and second conduit sections (14, 16).

First, fitting 54, 56, 58 of Teichert is not a "conduit section" as defined in claim 20. Claim 20 specifies that the flexible motion transmitting core element is movably supported in the conduit sections. As discussed in detail above in "Section A", the fitting 54, 56, 58 of Teichert is fixed to the cable 12. Thus the core element in Teichert is not "movably supported in the conduit sections" as required by claim 20, but is instead secured for movement with the cable 12.

Second, since the fitting 54 and the stop 16 are both secured to the cable 12, the distance between the guide 40 and the fitting 54 can never change. As discussed in "Section A," the distance between the guide 40 and fitting 54 does not and cannot change between Figure 2A and 2B.

Claim 20 is not anticipated by Teichert and the rejections for claims 20-21 should be withdrawn.

Glover '809

The Examiner proposes that claims 20-21 are anticipated by United States Patent No. 4,598,809 to Glover.

Claim 20 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components

(18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16).

First, what the Examiner calls adjustment components (elements 5 and 20 of Glover) do not "interconnect" the sections 7 and 9. As discussed in detail above in "Section A", conduit section 9 is clearly not connected to the housing 5.

Second, also as discussed in "Section A," any adjustment that is made to conduit 7 is subsequently made to conduit 9 in the same direction. Thus, the overall length of conduits 7 and 9 together are not shortened.

Claim 20 is not anticipated by Glover and the rejections for claims 20-21 should be withdrawn.

Adams '809

The Examiner proposes that claim 20 is anticipated by United States Patent No. 5,119,689 to Adams. Claim 20 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16).

The Examiner argues that the adjustment components in Adams are components 14, 21, and 6. The adjusting device 1 in Adams includes an abutment 2 and a supporting sleeve 3 that are connected by axially extending arms 4 to form a unitary component (see Figs. 1 and 6), col. 2, lines 39-43. Abutment 2 is secured to bracket 8 via mounting flange 6. Thus,

abutment 2 and support sleeve 3 are fixed and do not move relative to bracket 8. A sheath end-piece 14 is connected to one of the conduits and includes external locking teeth 18 that engage internal locking teeth 12 in a locking sleeve 11.

An actuating sleeve 21 surrounds support sleeve 3 and is used actuate the locking member 11 by rotational input. A compression spring 20 reacts between the end-piece 14 and the support sleeve 3. Because the actuating sleeve 21 is mounted on the support sleeve 3, which is fixed to abutment 2, the actuating sleeve 21 does not move axially with respect to the bracket 8. Actuating sleeve 21 can only be rotated to actuate the locking sleeve 11. The compression spring 20 urges the end-piece 14 along the cable length away from the support sleeve 3, see col. 4, claim 2. Thus, the spring urges the end-piece 14 to the left in Figure 1, which lengthens the overall length of the conduits.

The Adams adjusting device operates in the following manner. The locking sleeve 11 is moved to an unlocked position, i.e., teeth 12 and 18 are disengaged. End-piece 14 is moved to the left via spring 20 until the proper adjustment length is achieved and then the actuating sleeve 21 is used to rotate the locking sleeve 11 into the locked position.

Thus, Adams does not disclose a coil spring interacting between the adjustment components to bias the components together to shorten the overall length of the first and second conduit sections as required by claim 20. Adams does not anticipate claim 20 and the rejection should be withdrawn.

F. The Rejection of Claim 23-27 Under 35 U.S.C. 102(b) Is Improper

Glover '809

The Examiner proposes that claims 23-27 are anticipated by United States Patent No.

4,598,809 to Glover. Claim 23 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a locking member (19) to prevent relative telescoping movement between the adjustment components (18, 20). Claim 23 also requires a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16).

First, as discussed above in "Section A," elements 5 and 20 of Glover do not "interconnect" the sections 7 and 9. Second, any adjustment that is made to conduit 7 is subsequently made to conduit 9 in the same direction so the overall length of conduits 7 and 9 together are not shortened.

Finally, elements 30 and 31 are not locking members. As discussed above in "Section B", element 30 is a clutch assembly used to accommodate wear. For these reasons, claim 23 is not anticipated by Glover and the rejections for claims 23-27 should be withdrawn.

35 U.S.C. 112, Second Paragraph

Claim 27 stands rejected under 35 U.S.C. 112, second paragraph, for being indefinite because Figures 3, 4, and 6 do not show that locking member 19 is abutted with spring 22. As clearly set forth in the specification at col. 3, lines 4-8, an abutment is presented by the locking member 19 for reacting with the end of the spring 22 in place of the retainer 24 upon assembly of the male 18 and female 20 telescoping members so that the members 18, 20 are biased together in the direction to shorten the overall length of the conduits 14, 16. This is clearly an assembly step that is easily visualized by reading the assembly description in the application and by viewing the drawings in conjunction with reading the assembly

description. Thus, Applicant believes that claim 27 is not indefinite and the rejection should be withdrawn.

35 U.S.C. 112, First Paragraph

Claim 27 stands rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner argues that the locking member 19 is not shown to abut the spring 22 in the drawings. As discussed above, this is clearly an assembly step that is easily visualized by reading the assembly description in the application and by viewing the drawings in conjunction with reading the assembly description. Thus, Applicant believes that claim 27 is sufficiently described within the application and the rejection should be withdrawn.

G. The Rejection of Claim 28 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 28 is anticipated by United States Patent No. 5,119,689 to Adams. Claim 28 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16). Claim 28 further includes the limitations the male (18) and female (20) members having complementary keyways (38, 40) for rotary orientation of the male member (18) relative to the female member (20).

First, the Examiner argues that the adjustment components in Adams are components 14, 21, and 6. As discussed in detail above in "Section E", these components 14, 21, and 6 are not adjusting components that operate in the manner as set forth in claim 28. Further, the compression spring 20 urges the end-piece 14 along the cable length away from the support sleeve 3, i.e., the spring urges the end-piece 14 to the left in Figure 1, which lengthens the overall length of the conduits.

Adams also does not disclose male and female members having complementary keyways. The Examiner argues that the male member is 14 and the female member is 21, 6 with the keyways being 23 and 13. The locking sleeve 11, not the end-piece 14, includes cogs 13 for engaging catches recesses 23 on the actuating sleeve 21. The cogs 13 and the recesses are used for locking purposes and are not used to orientate the male and female relative to one another so that the locking member can be properly engaged.

Thus, Adams does not disclose a coil spring interacting between the adjustment components to bias the components together to shorten the overall length of the first and second conduit sections as required by claim 28 and further does not disclose complementary keyways on the male and female members. For these reasons, Adams does not anticipate claim 28 and the rejection should be withdrawn.

H. The Rejection of Claim 37 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 37 is anticipated by United States Patent No. 5,119,689 to Adams. Claim 37 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a

coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16). Claim 37 further includes the limitation a pillar (36) extending into said adjustment components (18, 20) and having a bore therethrough for receiving said core element (12).

First, as discussed in detail above in "Section E," components 14, 21, and 6 of Adams are not adjusting components that operate in the manner as set forth in claim 37.

Second, Adams does not disclose a pillar that extends into the adjustment components. The Examiner argues that the member surrounding the right conduit section in Figure 1 is a pillar. This member is a swivel tube have a swivel ball at one end that is fixed to the end piece 14 to accommodate rotational movement. Thus, Adams does not anticipate claim 30 and the rejection should be withdrawn.

Claims 37-40 stand rejected under 35 U.S.C. 112, second paragraph, because there is no antecedent basis for "said members." Applicant proposes to amend claim 37 to change "said members" to "said components" in order to overcome this rejection.

I. The Rejection of Claim 38 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 38 is anticipated by United States Patent No. 5,119,689 to Adams. Claim 38 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit

sections (14, 16). Claim 38 further includes the limitations the male (18) and female (20) members having complementary keyways (38, 40) for rotary orientation of the male member (18) relative to the female member (20).

First, as discussed in detail above in "Section E," components 14, 21, and 6 of Adams are not adjusting components that operate in the manner as set forth in claim 38.

Adams also does not disclose male and female members having complementary keyways. This is discussed in detail above in "Section G."

Thus, Adams does not disclose a coil spring interacting between the adjustment components to bias the components together to shorten the overall length of the first and second conduit sections as required by claim 38 and further does not disclose complementary keyways on the male and female members. For these reasons, Adams does not anticipate claim 38 and the rejection should be withdrawn.

J. The Rejection of Claim 39 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 39 is anticipated by United States Patent No. 5,119,689 to Adams. Claim 39 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16). Claim 39 further includes the limitations the male (18) and female (20) members having complementary keyways (38, 40) for rotary orientation of the male member (18) relative to the female member (20). Claim 39 further includes the limitations that wherein said male

member (18) presents an internal limit surface (42) for engaging an inner end (32) of said pillar (36) to limit insertion of said male member (18) into said female member (20) to define the shortest overall length of said conduit.

First, as discussed in detail above in "Section E," components 14, 21, and 6 of Adams are not adjusting components that operate in the manner as set forth in claim 39.

Adams also does not disclose male and female members having complementary keyways as discussed above in "Section G."

Adams also does not disclose an internal limit surface for engaging an inner end of the pillar to limit insertion of the male member into the female member to define the shortest overall length of the conduit. What the Examiner is arguing is the pillar, the member surrounding the right conduit section, is actually a swivel tube. The swivel tube is fixed for movement with the end-piece 24 and thus is always in the same position with respect to the end-piece and therefore cannot define the shortest overall length of the conduit.

Thus, Adams does not disclose a coil spring interacting between the adjustment components to bias the components together to shorten the overall length of the first and second conduit sections as required by claim 39, does not disclose complementary keyways on the male and female members, and does not disclose an internal limit surface for engaging an inner end of the pillar to limit insertion of the male member into the female member to define the shortest overall length of the conduit. For these reasons, Adams does not anticipate claim 39 and the rejection should be withdrawn.

K. The Rejection of Claim 40 Under 35 U.S.C. 102(b) Is Improper

The Examiner proposes that claim 40 is anticipated by United States Patent No.

5,119,689 to Adams. Claim 40 includes the limitation of first (14) and second (16) conduit sections with a core element (12) movably supported in the conduit sections and adjustment components (18, 20) interconnecting the first and second conduit sections (14, 16) and a coil spring (22) interacting between the adjustment components (18, 20) to bias the components (18, 20) together to shorten the overall length of said first and second conduit sections (14, 16). Claim 40 further includes the limitation wherein the adjustment components include a female member and a male member slidably disposed in the female member with the pillar being slidably disposed in the male member.

First, as discussed in detail above in "Section E," components 14, 21, and 6 of Adams are not adjusting components that operate in the manner as set forth in claim 40.

Second, what the Examiner is arguing is the pillar, the member surrounding the right conduit section, is actually a swivel tube. The swivel tube is fixed for movement with the end-piece 24 and thus is always in the same position with respect to the end-piece. Thus, the swivel tube cannot be slidably disposed in the male member. For these reasons, Adams does not anticipate claim 40 and the rejection should be withdrawn.

Closing

For the reasons set forth above, the rejection of all claims is improper and should be reversed. Appellant earnestly requests such an action.

Respectfully Submitted,

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CERTIFICATE OF MAILING

I hereby certify that the attached **Appeal Brief** is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to **Box AF, Assistant Commissioner of Patents, Washington, D.C. 20231**, on this **22nd** day of **May, 2000**.

Brenda J. Hughes

CLAIM APPENDIX

4. A motion transmitting remote control assembly **(10)** for transmitting motion in a curved path, said assembly comprising:

a first **(14)** and second **(16)** conduit sections;

a flexible motion transmitting core element **(12)** movably supported in said conduit sections;

adjustment components **(18, 20)** interconnecting said first and second conduit sections **(14, 16)** and in telescoping relationship with each other for adjusting the overall length of said first and second conduit sections **(14, 16)** wherein one of said adjustment components is a female member **(20)** and the other of said adjustment components is a male member **(18)** slidably disposed in said female member **(20)**;

a coil spring **(22)** supported on said male member **(18)** and interacting between said members **(18, 20)** to bias said members **(18, 20)** together to shorten the overall length of said first and second conduit sections **(14, 16)**; and

a retainer **(24)** for retaining said spring **(22)** in compression on one of said members **(18, 20)**, said members **(18, 20)** including an abutment **(19)** for reacting with said spring **(22)** in place of said retainer **(24)** to bias said members **(18, 20)** together in the direction to shorten the overall length of said conduit sections **(14, 16)**.

5. An assembly as set forth in claim 4 wherein said male member **(18)** includes adjustment teeth **(21)** therealong and a locking member **(19)** supported by said female member **(20)** for engaging said teeth **(21)** in a locked position to prevent relative telescoping movement between engaging said teeth **(21)** in a locked position to prevent relative telescoping movement between said telescoping members **(18 and 20)**, said abutment being presented by said locking member **(19)**.

6. An assembly as set forth in claim 5 wherein said locking member **(19)** includes a tunnel **(30)** extending therethrough for receiving said retainer **(24)** through said tunnel **(30)** during telescoping movement of said male and female members **(18 and 20)** in the conduit

lengthening direction to allow said abutment on said locking member **(19)** to react with said spring **(22)**.

7. An assembly as set forth in claim 6 wherein said male and female member **(18 and 20)** include complementary keyways **(38 and 40)** for rotary orientation of said male member **(18)** relative to said female member **(20)**.

8. An assembly as set forth in claim 7 wherein said spring **(22)** spiraled around said male member **(18)** and includes an annular collar **(26)** reacting axially between said retainer **(24)** and said spring **(22)** and for reacting between said spring **(22)** and said locking member **(19)**.

9. An assembly as set forth in claim 8 wherein said male member **(18)** defines an inner end **(32)** and said female member **(20)** presents a bottom end wall **(34)**, said retainer **(24)** presenting a reaction surface for reacting with said collar **(26)** and which reaction surface is axially spaced toward said bottom end wall **(34)** from said abutment presented by said locking member **(19)** when said inner end **(32)** of said male member **(18)** is fully inserted adjacent said bottom end wall **(34)** of said female member **(20)**.

10. An assembly as set forth in claim 9 including a detent **(27)** for holding said locking member **(19)** in an intermediate position out of engagement with said teeth **(21)** while in engagement with said collar **(26)**.

11. An assembly as set forth in claim 10 wherein said male member **(18)** includes a sealing length adjacent said inner end **(32)** thereof in sliding engagement with said female member **(20)** and a reduced cross section defining a spring seat **(44)** therebetween, said spring **(22)** reacting between said spring seat **(44)** and said collar **(26)**.

12. An assembly as set forth in claim 11 including a seal **(46)** sealing said sealing length of said male member **(18)** and said female member **(20)**.

13. An assembly as set forth in claim 12 including a pillar **(36)** extending into said female member **(20)** from said bottom end wall **(34)** thereof, said pillar **(36)** having a bore therethrough, said core element extending through said bore in said pillar **(36)**.

14. An assembly as set forth in claim 13 wherein said keyways **(38 and 40)** extend axially along the exterior of said pillar **(36)**.

15. An assembly as set forth in claim 13 wherein said male member **(18)** presents an internal limit surface **(42)** for engaging the inner end **(32)** of said pillar **(36)** to limit the insertion of said male member **(18)** into said female member **(20)** to define the shortest overall length of said conduit.

16. An assembly as set forth in claim 13 wherein said locking member **(19)** is U-shaped with teeth **(23)** on the interior of said legs for engaging said teeth **(21)** on said male member **(18)** and hooks **(25)** at the distal ends of said legs, said detent **(27)** including recesses in said female member **(20)** for engaging said hooks **(25)** in said intermediate position, said female member **(20)** presenting catches **(28)** for engaging and retaining said hooks **(25)** to lock said locking member **(19)** in said locked position.

17. The motion transmitting remote control assembly **(10)** of claim 4 wherein said spring **(22)** expands axially to bias the components **(18, 20)** together to shorten the overall length of said first and second conduit section **(14, 16)**.

18. A motion transmitting remote control assembly **(10)** for transmitting motion in a curved path, said assembly comprising:

a first **(14)** and second **(16)** conduit sections;

a flexible motion transmitting core element **(12)** movably supported in said conduit sections;

adjustment components **(18, 20)** interconnecting said first and second conduit sections

(14, 16) and in telescoping relationship with each other for adjusting the overall length of said first and second conduit sections **(14, 16)** wherein one of said adjustment components includes adjustment teeth **(21)** and the other of said adjustment components supports a locking member **(19)** that selectively engages said teeth **(21)** to prevent relative telescoping movement between said adjustment components **(18, 20)**; and

a coil spring **(22)** interacting between said adjustment components **(18, 20)** to bias said components **(18, 20)** together to shorten the overall length of said first and second conduit sections **(14, 16)**.

19. A motion transmitting remote control assembly **(10)** for transmitting motion in a curved path, said assembly comprising:

a first **(14)** and second **(16)** conduit sections;

a flexible motion transmitting core element **(12)** movably supported in said conduit sections;

adjustment components **(18, 20)** interconnecting said first and second conduit sections **(14, 16)** and in telescoping relationship with each other for adjusting the overall length of said first and second conduit sections **(14, 16)**;

a coil spring **(22)** interacting between said adjustment components **(18, 20)** to bias said components together to shorten the overall length of said first and second conduit sections **(14, 16)**; and

a collar **(26)** supported on one of said adjustment components **(18, 20)** for reacting axially between said one of said adjustment components and said spring **(22)**.

20. A motion transmitting remote control assembly **(10)** for transmitting motion in a curved path, said assembly comprising:

a first **(14)** and second **(16)** conduit sections;

a flexible motion transmitting core element **(12)** movably supported in said conduit sections;

adjustment components **(18, 20)** interconnecting said first and second conduit sections **(14, 16)** and in telescoping relationship with each other for adjusting the overall length of said

first and second conduit sections **(14, 16)** wherein said adjustment components include a female member **(20)** and a male member **(18)** slidably disposed in said female member **(20)**; and

a coil spring **(22)** supported on said male member **(18)** and interacting between said members **(18, 20)** to bias said members **(18, 20)** together to shorten the overall length of said first and second conduit sections **(14, 16)**.

21. An assembly as set forth in claim 20 including a retainer **(24)** disposed on one of said adjustment components **(18, 20)** for retaining said spring **(22)** in compression.

22. An assembly as set forth in claim 21 wherein said retainer **(24)** is formed as a projection on said male member **(18)**.

23. An assembly as set forth in claim 20 including a locking member **(19)** supported by said female member **(20)** and movable between a locked position to prevent relative telescoping movement between the adjustment components **(18, 20)** and an unlocked position to allow relative telescoping movement between the adjustment components **(18, 20)**.

24. An assembly as set forth in claim 23 wherein said male member **(18)** includes adjustment teeth **(21)** and said locking member **(19)** includes locking teeth **(23)** for selectively engaging said adjustment teeth **(21)** when said locking member **(19)** is moved to said locked position.

25. An assembly as set forth in claim 24 wherein said locking member **(19)** includes at least one detent **(25)** and said female member **(20)** includes at least one recess **(27)** for receiving said detent to hold said locking member **(19)** in said unlocked position while prohibiting relative movement between said female member **(20)** and said locking member **(19)**.

26. An assembly as set forth in claim 25 wherein said female member **(20)** includes at least one catch **(28)** for engaging and retaining said detent **(25)** when said locking member **(19)**

is moved to said locked position.

27. An assembly as set forth in claim 23 wherein said locking member **(19)** defines an abutment that reacts with said spring **(22)** during assembly of said male member **(18)** into said female member **(20)** such that said adjustment components **(18, 20)** are biased together to shorten the overall length of said conduit sections **(14, 16)**.

28. An assembly as set forth in claim 20 wherein said male **(18)** and female **(20)** members includes complementary keyways **(38, 40)** for rotary orientation of the male member **(18)** relative to the female member **(20)**.

29. An assembly as set forth in claim 28 including a retainer **(24)** formed on said male member **(18)** for retaining said spring **(22)** in compression and a locking member **(19)** supported on said female member **(20)**, said locking member **(19)** being selectively engageable with said male member **(18)** to prevent relative movement between said male **(18)** and female **(20)** members wherein said keyways align said retainer **(24)** within said locking member **(19)** as said male member **(18)** is inserted into said female member **(20)**.

30. A method for adjusting the length of a motion transmitting remote control assembly **(10)** having first **(14)** and second **(16)** conduit sections, adjustment components **(18, 20)** interconnecting the first and second conduit sections **(14, 16)** and in telescoping relationship with each other, a coil spring **(22)** interacting between the adjustment components, and a locking member **(19)** supported on one of the adjustment components **(18, 20)** comprising the steps of:

(a) installing the motion transmitting remote control assembly **(10)** in a vehicle;

(b) biasing the adjustment components **(18, 20)** together to shorten the overall length of the first **(14)** and second **(16)** conduit sections after said step (a); and

(c) moving the locking member **(19)** to a locked position to prevent relative movement between the adjustment components **(18, 20)** subsequently to step (b).

31. A method as set forth in claim 30 wherein step (a) further includes the steps of providing the adjustment components as a male member **(18)** and a female member **(20)** and inserting the male member **(18)** into the female member **(20)**.

32. A method as set forth in claim 31 including the step of supporting the spring **(22)** on the male member **(18)**.

33. A method as set forth in claim 32 including the steps of providing a first spring seat **(44)** on the male member **(18)**, supporting a retainer **(24)** on the male member **(18)**, seating one end of the spring **(22)** on the first spring seat **(44)**, and reacting an opposing end of the spring **(22)** against the retainer **(24)**.

34. A method as set forth in claim 33 including the steps of forcing the spring **(22)** over the retainer **(24)** as the spring is installed onto the male member **(18)**, installing a collar **(26)** onto the male member **(18)** adjacent to the retainer **(24)**, and seating the spring **(22)** between the first spring seat **(44)** and the collar **(26)** prior to step (b).

35. A method as set forth in claim 32 including the steps of providing the locking member **(19)** with at least one detent **(25)** and the female member **(20)** with at least one recess **(27)**, installing the locking member **(19)** on the female member **(20)**, and retaining the locking

member **(19)** on the female member **(20)** in an unlocked position by engaging the detent **(25)** in the recess **(27)** prior to step (c).

36. A method as set forth in claim 35 including the steps of providing the female member **(20)** with at least one catch **(28)** and retaining the detent **(25)** with the catch **(28)** when the locking member **(19)** is moved to the locked position during step (c).

37. A motion transmitting remote control assembly **(10)** for transmitting motion in a curved path, said assembly comprising:

a first **(14)** and second **(16)** conduit sections;

a flexible motion transmitting core element **(12)** movably supported in said conduit sections;

adjustment components **(18, 20)** interconnecting said first and second conduit sections **(14, 16)** and in telescoping relationship with each other for adjusting the overall length of said first and second conduit sections **(14, 16);**

a pillar **(36)** extending into said adjustment components **(18, 20)** and having a bore therethrough for receiving said core element **(12);** and

a coil spring **(22)** interacting between said members **(18, 20)** to bias said members **(18, 20)** together to shorten the overall length of said first and second conduit sections **(14, 16)**.

38. An assembly as set forth in claim 37 wherein said adjustment components include a female member **(20)** and a male member **(18)** slidably disposed in said female member **(20)** including complementary keyways **(38, 40)** for rotary orientation of the male member **(18)** relative to the female member **(20)**.

39. An assembly as set forth in claim 38 wherein said male member (18) presents an internal limit surface (42) for engaging an inner end (32) of said pillar (36) to limit insertion of said male member (18) into said female member (20) to define the shortest overall length of said conduit.

40. An assembly as set forth in claim 37 wherein said adjustment components include a female member **(20)** and a male member **(18)** slidably disposed in said female member **(20)**, said pillar **(36)** being slidably disposed in said male member **(18)**.